

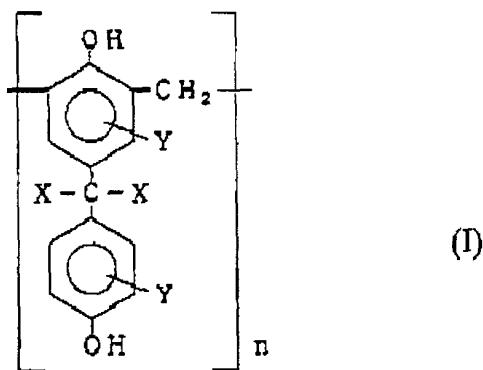
What is claimed is :

1. A battery comprising :  
a battery element including a non-aqueous electrolyte ;  
5 a film case having at least a sealant polymer resin film for sealing  
said battery element ;  
at least a lead terminal extending from said battery element and  
projecting from said film case, and said lead terminal with a surface having  
a contact area in contact directly with said sealant polymer resin film, and  
10 at least said contact area of said surface of said lead terminal is coated with  
an anti-corrosion coating film,  
wherinc said anti-corrosion coating film includes :  
(A) a polymer of structural units of a phenolic compound, and at  
least a part of said structural units includes a substituent which comprises  
15 an amino group or a substituted amino group ;  
(B) a phosphate compound ; and  
(C) a titanium fluorine compound.
2. The battery as claimed in claim 1, wherinc said anti-corrosion  
20 coating film has a thickness in the range of 5 nanometers to 1000  
nanometers.
3. The battery as claimed in claim 1, wherinc an entirety of said  
surface of said lead terminal is coated with an anti-corrosion coating film.

4. The battery as claimed in claim 1, wherein (A) said polymer of structural units is represented by general formula (I) :

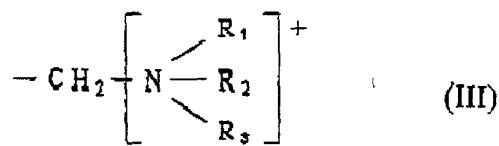
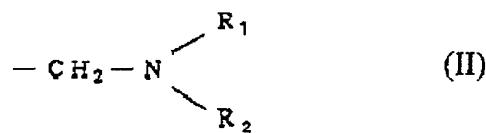
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where "n" is an average polymerization degree in the range of 2 to 50, "X" is a hydrogen atom, C<sub>1</sub>-C<sub>5</sub> alkyl groups or C<sub>1</sub>-C<sub>5</sub> hydroxy alkyl groups, "Y" is an oxygen atom or a Z-group which is represented by either one of general formulae (II) and (III) :

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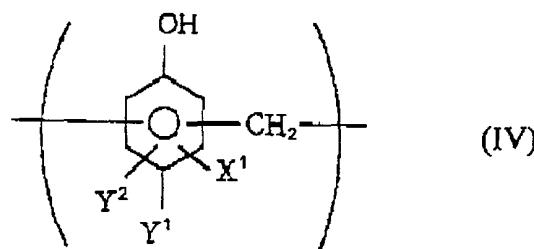


where each of "R<sub>1</sub>", "R<sub>2</sub>" and "R<sub>3</sub>" is independently selected from C<sub>1</sub>-C<sub>10</sub> alkyl groups or C<sub>1</sub>-C<sub>10</sub> hydroxy alkyl groups, and an averaged number of said Z-groups bonded to each benzene ring is in the 5 range of 0.2 to 1.0.

5. The battery as claimed in claim 1, wherein (A) said polymer of structural units is represented by general formula (IV) :

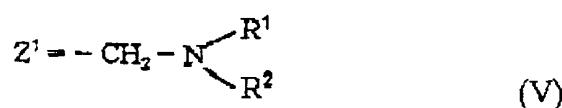
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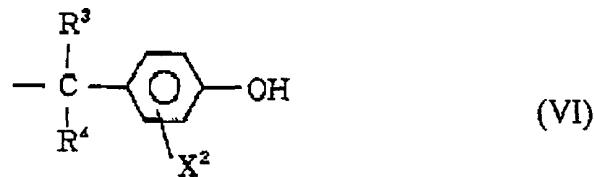
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where "X<sup>1</sup>" in each structural unit is independently selected from a hydrogen atom or Z<sup>1</sup>-group which is represented by general formula (V) :



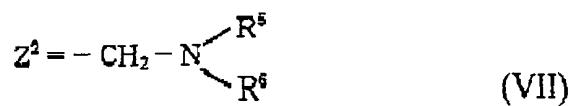
where each of "R<sup>1</sup>" and "R<sup>2</sup>" is independently selected from a hydrogen atom, C<sub>1</sub>-C<sub>10</sub> alkyl groups, or C<sub>1</sub>-C<sub>10</sub> hydroxy alkyl groups ; and "Y<sup>1</sup>" in general formula (IV) is selected from a hydrogen atom, hydroxyl groups, C<sub>1</sub>-C<sub>5</sub> alkyl groups, C<sub>1</sub>-C<sub>5</sub> hydroxy alkyl groups, C<sub>6</sub>-C<sub>12</sub> aryl groups, benzyl groups or a group which is represented by general formula (VI) :

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where each of "R<sup>3</sup>" and "R<sup>4</sup>" is independently selected from a hydrogen atom, C<sub>1</sub>-C<sub>10</sub> alkyl groups, or C<sub>1</sub>-C<sub>10</sub> hydroxy alkyl groups ; and if "Y<sup>1</sup>" is represented by the general formula (VI), then each "X<sup>2</sup>" is in each structural unit represented by the general formula (IV) is independently selected from a hydrogen atom or Z<sup>2</sup>-group which is represented by general formula (VII) :



where each of "R<sup>5</sup>" and "R<sup>6</sup>" is independently selected from a hydrogen atom, C<sub>1</sub>-C<sub>10</sub> alkyl groups, or C<sub>1</sub>-C<sub>10</sub> hydroxy alkyl groups ; and "Y<sup>2</sup>" in the general formula (IV) represents a hydrogen atom or a part of a condensed benzene ring including "Y<sup>1</sup>", "Y<sup>2</sup>" and a bonding between "Y<sup>1</sup>" and "Y<sup>2</sup>" ; and where a total rate of introducing Z<sup>1</sup>-group and Z<sup>2</sup>-group into each benzene ring is in the range of 0.2 – 1.0.

- 5 6. The battery as claimed in claim 1, wherein said (B) phosphate compound is selected from the groups consisting of phosphoric acid, phosphate, condensed phosphoric acid, condensed phosphate, zirconium phosphate, and titanium phosphate.
- 10 7. The battery as claimed in claim 1, wherein said (C) titanium fluorine compound is selected from the group consisting of titanium hydrofluoric acid, and titanium borofluoric acid.
- 15 8. The battery as claimed in claim 1, wherein said lead terminal includes aluminum.
- 20 9. The battery as claimed in claim 1, wherein said non-aqueous electrolyte includes a lithium salt of an inorganic fluoride.
10. The battery as claimed in claim 1, wherein said lead terminal has two generally flat surfaces opposite to each other, and an entirety of each of

said two generally flat surfaces is coated with said anti-corrosion coating film.

11. The battery as claimed in claim 10, wherein said lead terminal  
5 comprises a film-structure which further comprises : a metal foil ; and said  
anti-corrosion coating films coating said metal foil.

12. The battery as claimed in claim 1, wherein a entirety of surface  
said lead terminal is coated with said anti-corrosion coating films.

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13. The battery as claimed in claim 12, wherein said lead terminal  
comprises : a core structure comprising a metal foil ; and said anti-  
corrosion coating film coating said core structure.

15 14. A lead terminal connected with an electric device sealed with a  
film case having at least a sealant polymer resin film for sealing said  
electric device, and a surface of said lead terminal having a contact area in  
contact directly with said sealant polymer resin film, and said contact area  
of said surface of said lead terminal being coated with an anti-corrosion  
20 coating film,

wherein said anti-corrosion coating film includes :

(A) a polymer of structural units of a phenolic compound, and at  
least a part of said structural units includes a substituent which comprises  
an amino group or a substituted amino group ;

- (B) a phosphate compound ; and
- (C) a titanium fluorine compound.

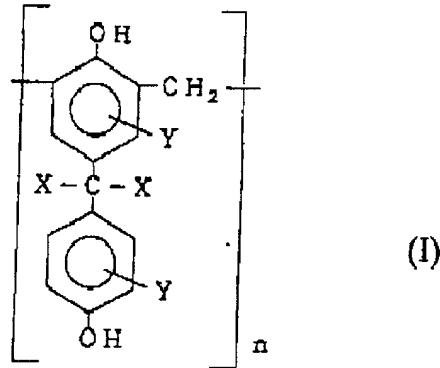
15. The lead terminal as claimed in claim 14, wherein said anti-corrosion coating film has a thickness in the range of 5 nanometers to 1000 nanometers.

16. The lead terminal as claimed in claim 14, wherein an entirety of said surface of said lead terminal is coated with an anti-corrosion coating film.

17. The lead terminal as claimed in claim 14, wherein (A) said polymer of structural units is represented by general formula (I) :

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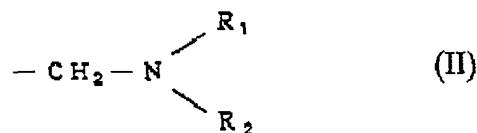


(I)

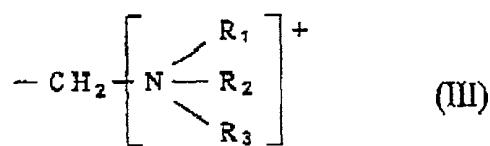
where "n" is an average polymerization degree in the range of 2 to 50, "X" is a hydrogen atom, C<sub>1</sub>-C<sub>5</sub> alkyl groups or C<sub>1</sub>-C<sub>5</sub> hydroxy alkyl

groups, "Y" is an oxygen atom or a Z-group which is represented by either one of general formulae (II) and (III) :

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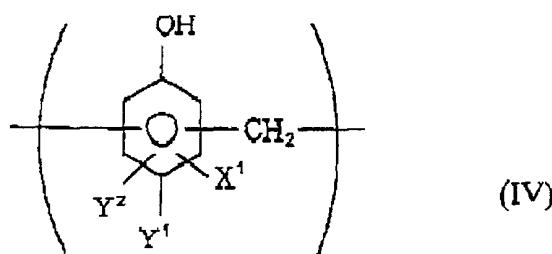


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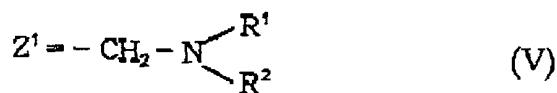
where each of "R<sub>1</sub>", "R<sub>2</sub>" and "R<sub>3</sub>" is independently selected from C<sub>1</sub>-C<sub>10</sub> alkyl groups or C<sub>1</sub>-C<sub>10</sub> hydroxy alkyl groups, and an averaged number of said Z-groups bonded to each benzene ring is in the range of 0.2 to 1.0.

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18. The lead terminal as claimed in claim 14, wherein (A) said polymer of structural units is represented by general formula (IV) :



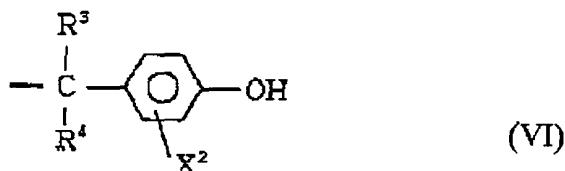
where "X<sup>1</sup>" in each structural unit is independently selected from  
 5 a hydrogen atom or Z<sup>1</sup>-group which is represented by general formula (V) :



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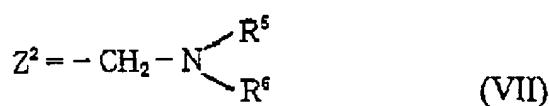
where each of "R<sup>1</sup>" and "R<sup>2</sup>" is independently selected from a  
 hydrogen atom, C<sub>1</sub>-C<sub>10</sub> alkyl groups, or C<sub>1</sub>-C<sub>10</sub> hydroxy alkyl groups ; and  
 "X<sup>1</sup>" in general formula (IV) is selected from a hydrogen atom, hydroxyl  
 15 groups, C<sub>1</sub>-C<sub>5</sub> alkyl groups, C<sub>1</sub>-C<sub>5</sub> hydroxy alkyl groups, C<sub>6</sub>-C<sub>12</sub> aryl  
 groups, benzyl groups or a group which is represented by general formula  
 (VI) :

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where each of "R<sup>3</sup>" and "R<sup>4</sup>" is independently selected from a

hydrogen atom, C<sub>1</sub>-C<sub>10</sub> alkyl groups, or C<sub>1</sub>-C<sub>10</sub> hydroxy alkyl groups ; and if "Y<sub>1</sub>" is represented by the general formula (VI), then each "X<sub>2</sub>" is in each structural unit represented by the general formula (IV) is independently selected from a hydrogen atom or Z<sub>2</sub>-group which is  
5 represented by general formula (VII) :



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where each of "R<sup>5</sup>" and "R<sup>6</sup>" is independently selected from a hydrogen atom, C<sub>1</sub>-C<sub>10</sub> alkyl groups, or C<sub>1</sub>-C<sub>10</sub> hydroxy alkyl groups ; and "Y<sub>2</sub>" in the general formula (IV) represents a hydrogen atom or a part of a condensed benzene ring including "Y<sub>1</sub>", "Y<sub>2</sub>" and a bonding between "Y<sub>1</sub>"  
15 and "Y<sub>2</sub>" ; and where a total rate of introducing Z<sub>1</sub>-group and Z<sub>2</sub>-group into each benzene ring is in the range of 0.2 – 1.0.

19. The lead terminal as claimed in claim 14, wherein said (B) phosphate compound is selected from the groups consisting of phosphoric acid, phosphate, condensed phosphoric acid, condensed phosphate, zirconium phosphate, and titanium phosphate.  
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20. The lead terminal as claimed in claim 14, wherein said (C) titanium fluorine compound is selected from the group consisting of

titanium hydrofluoric acid,, and titanium borofluoric acid.

21. The lead terminal as claimed in claim 14, wherein said lead terminal includes aluminum.

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22. The lead terminal as claimed in claim 14, wherein said lead terminal has two generally flat surfaces opposite to each other, and an entirety of each of said two generally flat surfaces is coated with said anti-corrosion coating film.

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23. The lead terminal as claimed in claim 22, wherein said lead terminal comprises a film-structure which further comprises : a metal foil ; and said anti-corrosion coating films coating said metal foil.

15 24. The lead terminal as claimed in claim 14, wherein a entirety of surface said lead terminal is coated with said anti-corrosion coating films.

25. The lead terminal as claimed in claim 24, wherein said lead terminal comprises : a core structure comprising a metal foil ; and said anti-  
20 corrosion coating film coating said core structure.